

REMARKS

Claims 7-27 are pending in the application. The substitute abstract and amendments to the specification correct minor typographical and grammatical errors. Newly added claims 7-27 are a substitute for canceled claims 1-5. No new matter is believed to be added to the application.

OBJECTIONS TO THE CLAIMS (PAGE 2 OF THE OFFICE ACTION)

The claims are objected to as not being in accordance with 37 C.F.R. §1.126 because claim 4 is missing. Claims 3-5 are objected to under 37 C.F.R. §1.75(c) as being in improper multiple dependent form.

Claims 1-5 have been canceled and have been replaced with newly added claims 7-27, which are correctly enumerated and set out dependencies in proper form. Accordingly, this rejection is obviated.

REJECTION UNDER 35 U.S.C. §112, FIRST PARAGRAPH (PAGES 2-3 OF THE OFFICE ACTION)

Claims 1 and 2 are rejected under 35 U.S.C. §112, first paragraph for reasons set forth on pages 2 and 3 of the Office Action. Applicants traverse this rejection. Reconsideration and withdrawal thereof are respectfully requested.

The specification and new claims clearly set forth an embodiment of the present invention where the polymer is macroreticular, thereby correcting a typographical error. Further, the new claims clearly set forth an embodiment

of the present invention pertaining to the cross-linking treatment to obtain the macroreticular polymer products. Accordingly, this rejection is overcome.

REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH (PAGE 3 OF THE OFFICE ACTION)

Claims 1 and 2 are rejection under 35 U.S.C. §112, second paragraph as being indefinite for reasons set forth on page 3 of the Office Action. Applicants traverse this rejection. Reconsideration and withdrawal of thereof are respectfully requested.

Claims 1-5 have been canceled and have been replaced with new claims 7-27. New claims 7-27 are clear and definite. Accordingly, this rejection is overcome.

REJECTION UNDER 35 U.S.C. §102(b) OVER GUSTAFSON '463, MEITZNER '220, OR WHITCOMB '536 (PAGES 3-4 OF THE OFFICE ACTION)

Claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by Gustafson '463 (USP 3,531,463), or Meitzner '220 (USP 4,297,220), or Whitcomb '536 (USP 5,468,536) for reasons set forth on pages 3-4 of the Office Action. Applicants traverse these rejections. Reconsideration and withdrawal thereof are respectfully requested.

The Present Invention and Its Advantages

The present invention pertains to macroreticular polymer having an enhanced capacity to absorb oily pollutants from aqueous environments.

These macroreticular products are formed from polystyrene or copolymers of styrene, ethylene, butadiene or elastomeric SBR. A special cross-linking process is performed in a chlorinated solvent utilizing DCMDMB with titanium tetrachloride. The macroreticular product forms a thick cross-linked mass, which can then be minced and deodorized.

The macroreticulated product is used in a polypropylene net, which is swept across oily polluted surface waters. The loaded net with absorbed oily material can be washed with petroleum so as to recycle the oily material as useful fuel while readying the macroreticular product for reuse.

Distinctions of the Present Invention over Gustafson '463

Gustafson '463 appears to disclose enrichment and/or separation of an organic compound by absorption processes using particles of a non-ionogenic macroreticular water-insoluble crosslinked polymer of polymerizable ethylenically unsaturated molecules. Gustafson '463 fails to disclose the utilization of macroreticular polymer products to absorb oil and organic solvents from water. The technology of Gustafson '463 is directed at removing soaps and surfactants from aqueous solutions and therefore fails to disclose a method for removing oil and organic solvents from water.

It has been shown, Gustafson '463 fails to disclose the utilization of macroreticular cross-linked polymers to remove oils or oily matter from aqueous systems. Neither does Gustafson '463 disclose the utilization of macroreticular

polymers in environmental remediation. As a result, Gustafson '463 fails to anticipate the present invention. Accordingly this rejection is overcome.

Distinctions of the Present Invention over Meitzner '220

Meitzner '220 appears to disclose a macroreticular copolymer absorption process for absorbing an organic material from a fluid or fluid mixture wherein the organic material is absorbed by a styrenic macroreticular cross-linked copolymer. Meitzner '220 fails to disclose a method for removing oil and organics from water.

The technology of Meitzner '220 is directed towards selective solvent absorption from solvent mixtures. For example, Meitzner '220 at column 9, lines 43-57 shows the preferential absorption of benzene by a macroreticular copolymer when it is placed in a solution of benzene and heptanes.

In contrast, embodiments of the present invention are directed towards the environmental remediation of surface waters, while the technology of Meitzner '220 is directed towards industrial chemical separation processes. Further, the polymers of Meitzner '220 are formed using suspension polymerization in aqueous media (see for example Meitzner '220 at column 5, line 61 - column 6, Line 15), while the macroreticular cross-linked product of the present invention is formed in a chlorinated solvent such as dichloroethane (see Example 1, page 7 of the specification). Therefore Meitzner '220 fails to anticipate either the cross-linking process or the end use of product of the present invention.

As has been shown, Meitzner '220 fails to anticipate environmental remediation using macroreticular cross-linked polymers and further fails to disclose how they can be obtained without using suspension polymerization. As a result, Meitzner '220 fails to anticipate the present invention. Accordingly, this rejection is overcome.

Distinctions of the Present Invention over Whitcomb '536

Whitcomb '536 appears to disclose absorbent articles of micro-fiber absorbent material comprising an elongate boom being formed of multiple adjacent micro-fiber layers. Whitcomb '536 fails to disclose environmental remediation using a macroreticular polymer product. Whitcomb '536 additionally fails to disclose the method for removing oil and organics from surface waters by placing a macroreticular polymer product in a net.

Embodiments of the present invention absorb oil from aqueous environments utilizing a macroreticular polymer having the ability to absorb oil both endomolecularly and by external adhesion. In contrast, the technology of Whitcomb '536 depends upon the utilization of melt blown micro-fiber constructions to trap oil droplets. Therefore, there is no teaching or suggestion in Whitcomb '536 that macroreticular polymers can be used in environmental remediation applications.

As has been shown, Whitcomb '536 fails to disclose the utilization of macroreticular polymers in nets to remediate surface waters. As a result,

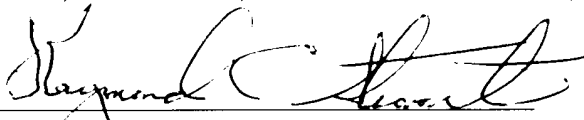
Whitcomb '536 fails to anticipate the present invention. Accordingly this rejection is overcome.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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